

INFORMATION REPORT INFORMATION REPORT

CENTRAL INTELLIGENCE AGENCY

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COUNTRY **USSR** (Ukrainian SSR)

REPORT

SUBJECT **Antifriction Metals Plant in Artemovsk**

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antifriction metals plant in Artemovsk (N 48-36, E 38-01)

The report contains information on the location, the number of employees, and the work schedule; raw materials, production volume, water and electric power supply, transportation facilities for raw materials and finished products, security precautions, and safety measures. The report also includes sketches of the layout of the plant and of the pipe-drawing section, and legends to the sketches.

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ANTI-FRICTION METALS PLANT IN ARTEMOVSK

General Description

1. The Artemovsk Antifriction Metals Plant which began operating in 1952 or 1953 produced pipe, rods, bars, and cable. [redacted] the plant's personnel [redacted] some 1,000 skilled workers and [redacted] plans were underway to expand the plant for the employment of as many as 27,000 workers. A new building whose foundation measured 200 x 80 meters was already under construction. [redacted] The plant was located about four kilometers from the center of Artemovsk (N 48-36, E 38-01) and approximately 900 meters northeast of the city's outskirts, between the railroad and the Artemovsk-Stalingrad highway, about 1,500 meters east of Astavsk.¹ See sketch on page 7 showing the plant's location and layout.

Plant's Layout

2. The plant was comprised of six main buildings and two smaller units. Following is a description of these buildings and installations. The numbers in parentheses correspond to those on the sketch on page 7.
 - (1) Foundry. This shop made cylinder castings out of copper and an unidentified light-gold-colored metal which were then conveyed to the Pipe-Drawing Section. The foundry was contained in a one-story brick 50 x 15 x 8-meter building which had three steel machestacks about two meters high and 0.60 in diameter.
 - (2) Pipe-Drawing Section. Following is a description of this shop's activities, equipment, and layout. See sketch on page 9.
 - a. Pipe from five to 60 millimeters in diameter, from two to five meters long, and varying between two and eight millimeters in thickness was made from copper and the light gold-colored metal mentioned above. The pipe had smooth interior and exterior surfaces and pipe with a diameter greater than 25 millimeters was polished both on the inside and outside. The shop also produced from the two metals rectangular bars and cylinders which were from five to 40 millimeters thick and from two to five meters long, and it made cable from the light gold-colored metal with diameters varying from two to eight millimeters. [redacted]
 - b. This shop employed 900 workers in three shifts. It produced from 25 to 30 metric-tons of pipe and cable daily and 20 percent more pipe than cable. The finished products were picked up daily by trucks belonging to unidentified plants.

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- c. The Pipe-Drawing Section had a large quantity of machinery of unknown make and in good condition [redacted] machinery and its functions as follows:

12 lathes which cut into various lengths the cylinders conveyed from the foundry.

Three refractory brick furnaces, measuring 6 x 1.25 x 2 meters.

[redacted] The furnaces had no smokestacks nor fuel tanks; [redacted]

[redacted] Raw materials were smelted here and the molten metal was conveyed to the presses where it was transformed into pipe, rods, bars, and cable. The furnaces were manually fed at one end. A cart picked up the red-hot materials on the other side and conveyed them to the presses.

Three electric iron furnaces, not insulated on the outside [redacted]

[redacted] measuring 7 x 1 x 1.30 meters on the outside. The chamber was pear-shaped and measured 6 x 0.60 meters. The lid was raised by electric motor and a crane deposited pipe for heat treatment; the pipe was then removed for cold-processing.

Three presses which automatically converted the heated billets into pipe. These presses were serviced by the three brick furnaces described above. One press worked vertically on small-diameter pipe; the other two worked horizontally on larger pipe, cable or wire, and bars. After leaving the presses, materials were cooled by being immersed in a solution of water and acid, or a chemical substance [redacted]

Two compressed air hammers with 150-kilogram pressure which pounded the ends of the pipe into a conical shape so that the lathe's pipe grip could be clamped onto the pipe. [redacted] compressors, located in a small basement in the center of the building, were used to run the hammers and the presses.

16 pipe-drawing blocks which were of different sizes and handled pipe according to its diameter. A steel rod, practically the same size as the pipe's interior diameter, was inserted through the cooled pipe. A lathe pipe grip was clamped to one end and the pipe was drawn through a die which gave it the correct exterior diameter. These blocks also drew metal bars which were thicker than 10 millimeters. If the pipe was too hard for this operation, it was sent first to the electric furnaces to make it pliable. After being heated, it was then cooled, the drawing operation was repeated, and the size of the pipe was reduced to the desired thickness. The same drawing process was applied to the bars, rods, and cable for which this was the final operation.

Five or six band saws which cut pipe with diameters of less than 25 millimeters.

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Four or five circular saws which cut all kinds of pipe, bars, and cylinders with diameters of more than 25 millimeters.

Two or three automatic buffing machines which finished the interior and exterior of the pipe.

Eight or ten overhead traveling cranes.

Five or six large fans, used only in summer, and a large number of small fans.

- d. The Pipe-Drawing Section was located in a one-story brick 200 x 80 x 12-meter building which had three rows of reinforced concrete columns, one in the center and one next to either wall, supporting the skylighted roof made of .7 x .5 x .8-meter asbestos shingles. It had large windows on all four sides. Most of the building was occupied by the Pipe Section; the remainder contained a tool storeroom, a small lathe shop with about 20 lathes for repairing machinery and molds, and a small foundry.

See sketch on page 9. The lathe shop employed 70 in three shifts. The tool storeroom had one supervisor in each of three shifts.

- (3) Foundry, a one-story brick 10 x 10 x 8-meter building which had a skylighted roof with steel framework. Here the blades, dies, and parts needed by the repair shop were made in the rough. The shop was equipped with one crane, one forge, and two compressed air hammers. Approximately 20 were employed in three shifts.
- (4) Sawmill, a 20 x 10-meter provisional wooden barracks, where timber was cut for the new construction and for packing. Unfinished wood was brought in by rail and the plant shipped out some of the finished wood. The sawmill was equipped with one vertical multiple band saw, two or three circular saws, and one crane for loading and unloading trains, located outside the building. Approximately 40 employees worked in three shifts.
- (5) Construction Materials Warehouse, a 20 x 5-meter wooden barracks where construction materials were stored and which had ten employees on one shift. This section tied rods for concrete reinforcing. It was equipped with a rod cut-off device.
- (6) Offices, contained in a two or three-story brick 20 x 10-meter building which housed the administration and Party, Komsomol, and Labor Union representatives.
- (7) Garage, a one-story brick 30 x 10-meter building which housed four or five two-or three-metric-ton trucks and three or four automobiles. the interior had a small repair shop, also.
- (8) Powerhouse, a one-story brick 5 x 5-meter building which was located outside the plant area, next to the wall. There was a row of power line tralised towers outside the building.
- (9) Coal warehouse.
- (10) Building, under construction.

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- (11) Vehicle entrance.
- (12) Railroad entrance.
- (13) Asphalt road which led to the village of Artavosk.
- (14) Electric power line.
- (15) Road, an extension of Artemovskaya ulitsa.
- (16) Railroad siding; the end of the line was at the East Station in Artemovsk.
- (17) Railroad siding, a section of the siding mentioned above (16); it joined the Stalingrad railroad line.
- (18) Stalingrad highway.

Production Volume

3. [redacted] the plant's daily production volume from 1955 to 1956 to be between 25 and 30 metric tons of which from 20 to 25 tons were pipe, three or four tons were bars and cylinders, and one metric ton was cable. At no time was production interrupted although its pace was slackened during the first few days of each month because of lack of raw materials; this lag was compensated for during the following days. Because the plant was relatively new and inexperienced in production methods, some 15 to 20 metric tons of defective material resulted weekly and were sent to the scrap pile to be recast.

Raw Materials

4. [redacted] the light-gold colored metal [redacted] was produced in the plant's foundry. Raw materials were hauled to the plant by rail [redacted]

Water Supply

5. [redacted] the water used by the plant was furnished by the city's water supply [redacted]

Electric Power

6. [redacted] the electric power used by the plant [redacted] was adequate and [redacted] there was a small power-house.

Transportation

7. The railroad siding, which entered the plant area from the north and connected with the Stalingrad line, was standard gauge. [redacted] There was a small loading platform about 10 meters long. All raw materials came by rail and all finished products left the plant by truck.

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8. The main highway which passed by the plant was asphalt-paved; a narrow dirt road branched off from it and led up to the plant. Plant grounds were unpaved and became very muddy during thaws but vehicles still operated. The plant had at its disposal four or five freight trucks, each with a two or three-metric-ton capacity, and there was a garage for their housing and maintenance.

Security and Safety Measures

9. [redacted] There were no sentry posts nor dogs. About ten guards were posted at the plant entrances both day and night; [redacted]

To enter or leave the plant, workers had to display the conventional propusk. After arriving at his respective shop, each worker had to hang a numbered metal disc on a plaque on the wall to indicate that he was present. There were no restricted areas within the plant. [redacted] the plant did not have its own fire squad but depended on the city's [redacted]

[redacted] hand extinguishers and hoses were hung on the walls. [redacted]

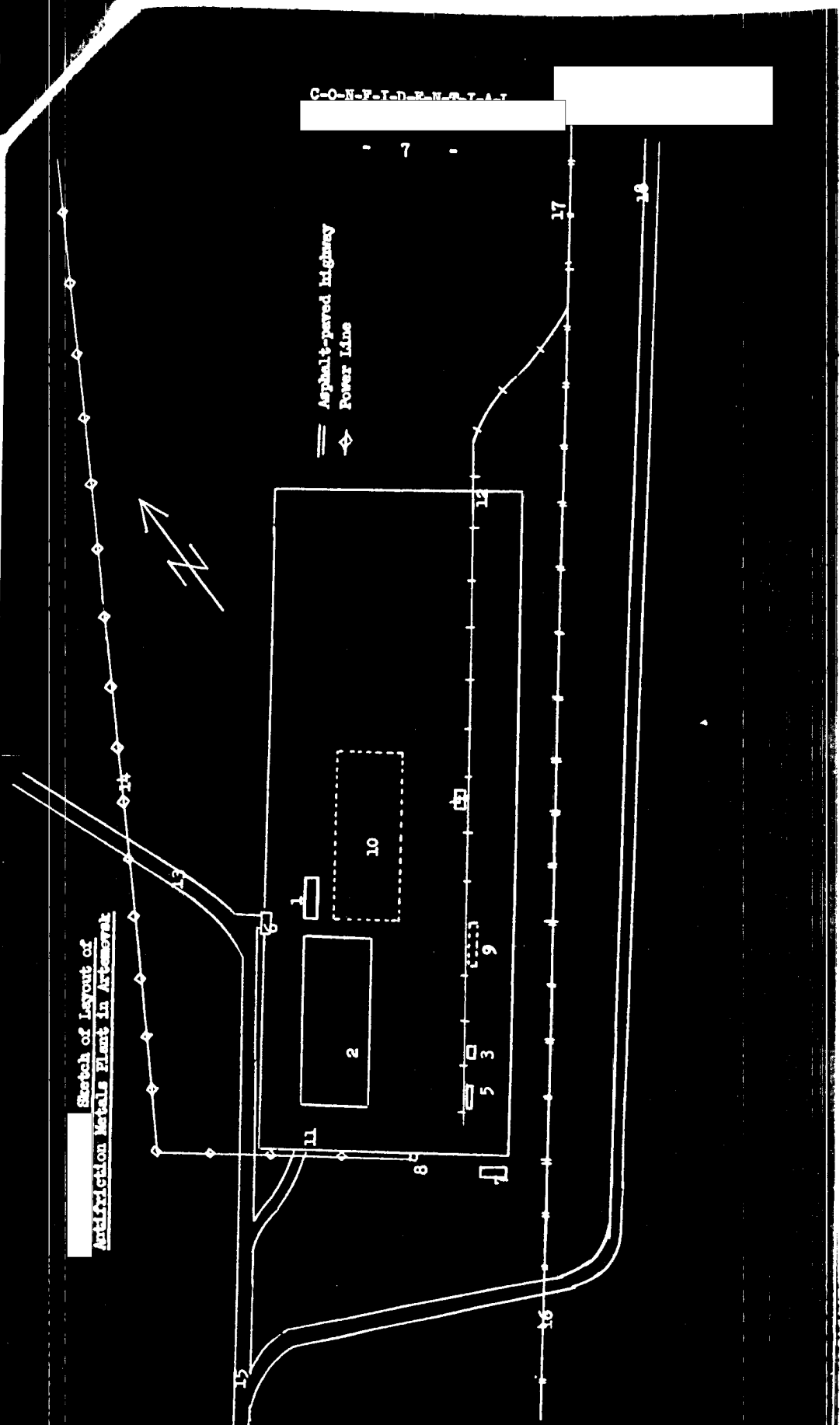
Working Schedule

10. The plant worked a six-day week, 24 hours a day, and three shifts daily. Unpaid holidays were 1 January, 1 and 2 May, 4, 7, and 8 November and Sundays. Vacations were arranged by schedule so that the plant was always in operation. Most workers had 12 working days of annual vacation; those involved in debilitating work, such as foundry workers or furnace and some lathe operators, were given 23 days.

1. [redacted] Comment. This is the phonetic spelling.

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Legend to [redacted] Sketch of Pipe-Drawing Section Layout

11. Following is the legend to [redacted] sketch of the layout of the Pipe-Drawing Section of the Amurfriction Metals Plant in Artemovsk on page 9.

■ Reinforced concrete columns.

P.D.B. Pipe Drawing Block.

E.F. Electric Furnace.

G.F. Gas or Petroleum Furnace.

P. Press.

C.L. Cutting Lathe.

B. Baths for cooling.

B.S. Band Saw.

C.S. Circular Saw.

H. Compressed-air Hammer.

C.D.B. Cable Drawing Block.

P.M. Polishing Machine.

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[illegible]

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